IN THE CLAIMS:

1.-16. (Cancelled)

17. (Currently Amended) An inverse quantization method for obtaining inverse-quantized orthogonal transform coefficients using an inverse quantization unit, by inverse-quantizing[[,]] quantized orthogonal transform[[,]] coefficients, said method comprising:

obtaining, using the inverse quantization unit, a weighting matrix;

obtaining, using the inverse quantization unit, a quantization parameter;

calculating, using the inverse quantization unit a level scale value [[(LSij)]] by multiplying a ~~component~~ value [[(Qbij)]], which is calculated from a component in i-th row and j-th column in the weighting matrix, and a normalization value, which is corresponding to the position of the component in i-th row and j-th column in the weighting matrix and a remainder of the quantization parameter divided by an integer equal to or greater than 2; ~~for the weighting matrix and a normalization value (Q2ij) respectively, the component value being located in a matrix position (ij) in the weighting matrix, and the normalization value being determined by a natural number indicating a remainder of the quantization parameter divided by an integer N(≥2) and by the matrix position of the component value;~~

multiplying, using the inverse quantization unit, a quantized orthogonal transform coefficient and the level scale value; and

shifting, using the inverse quantization unit, a product resulted from a multiplication by the number of bits in accordance with the quantization parameter so as to obtain an inverse-quantized orthogonal transform coefficient.

18. (Cancelled)

19. (Currently Amended) The inverse quantization method according to Claim [[18]] 17,

wherein the normalization value is a value determined according to the ~~matrix~~ position of the component ~~value~~ in the weighting matrix with regard to a vertical and a horizontal position ~~in the weighting matrix~~.

20. (Currently Amended) An image decoding method, using one of an encoder apparatus and a decoder apparatus, for inverse quantizing and inverse orthogonal transforming quantized orthogonal transform coefficients to obtain a block image, said method comprising:

obtaining, using an inverse quantization unit, a weighting matrix;

obtaining, using the inverse quantization unit, a quantization parameter;

calculating, using the inverse quantization unit, a level scale value [[(LSij)]] by multiplying a ~~component~~ value [[(Qbij)]] , which is calculated from a component in i-th row and j-th column in the weighting matrix, and a quantization step, which is corresponding to the position of the component in i-th row and j-th column in the weighting matrix and a remainder of the quantization parameter divided by an integer equal to or greater than 2; ~~for the weighting matrix and a normalization value (Q2ij) respectively, the component value being located in a~~

~~matrix position (ij) in the weighting matrix, and the normalization value being determined by a natural number indicating a remainder of the quantization parameter divided by an integer N(≥2) and by the matrix position of the component value;~~

multiplying, using the inverse quantization unit, a quantized orthogonal transform coefficient and the level scale value;

shifting, using the inverse quantization unit, a product resulted from a multiplication by the number of bits according to the quantization parameter so as to obtain an inverse-quantized orthogonal transform coefficient; and

obtaining, using the encoder apparatus or the decoder apparatus, a block image by [[an]] inverse orthogonal transforming the obtained inverse-quantized orthogonal transform coefficients through an addition/subtraction operation and a bit shifting operation.

21. (Currently Amended) An image decoding apparatus which decodes coded image data to obtain a decoded block image on a block basis, said apparatus comprising:

an obtainment unit operable to obtain a weighting matrix and a quantization parameter, and calculate a level scale value [[(LSij)]] by multiplying a ~~component~~ value [[(Qbij)]] , which is calculated from a component in i-th row and j-th column in the weighting matrix, and a quantization step, which is corresponding to the position of the component in i-th row and j-th column in the weighting matrix and a remainder of the quantization parameter divided by an integer equal to or greater than 2; ~~for the weighting matrix and a normalization value (Q2ij), the component value being located in a matrix position (ij) in the weighting matrix, and the normalization value being determined by a natural number indicating a remainder of the~~

~~quantization parameter divided by an integer N(≥2) and by the matrix position of the component value;~~

a multiplying unit operable to multiply a quantized orthogonal transform coefficient and the level scale value;

a shifter which shifts a product resulted from a multiplication by the number of bits according to the quantization parameter; and

an inverse orthogonal transformation unit operable to perform an inverse orthogonal transform on a result of the shifting through an addition/subtraction operation and a bit shifting operation to obtain an inverse orthogonal transformed block image.

22. (Currently Amended) A processor for use in a decoding apparatus which decodes a moving picture, said processor comprising:

an integrated circuit, wherein the processor,

i) obtains a weighting matrix and a quantization parameter, using said integrated circuit,

ii) calculates a level scale value [[(LSij)]] by multiplying a ~~component~~ value [[(Qbij))]] , which is calculated from a component in i-th row and j-th column in the weighting matrix, and a quantization step, which is corresponding to the position of the component in i-th row and j-th column in the weighting matrix and a remainder of the quantization parameter divided by an integer equal to or greater than 2; ~~and a normalization value (Q2ij) respectively, the component value being located in a matrix position (ij) in the weighting matrix, and the normalization value being determined by a natural number indicating a remainder of the~~

~~quantization parameter divided by an integer N(≥2) and by the matrix position of the component value,~~

iii) multiplies a quantized orthogonal transform coefficient and the level scale value,

iv) shifts a product resulted from the multiplication by the number of bits according to the quantization parameter so as to obtain an inverse-quantized orthogonal transform coefficient, and

v) performs an inverse [[an]] orthogonal transform on a result of the shifting.

23. (Currently Amended) A computer readable storage medium storing a program for decoding an image using a computer, said program causing the computer to execute the following steps:

obtaining, using the computer, a weighting matrix;

obtaining, using the computer, a quantization parameter;

calculating, using the computer, a level scale value [[(LSij)]] by multiplying ~~a component~~ value [[(Qbij)]] , which is calculated from a component in i-th row and j-th column in the weighting matrix, and a normalization value, which is corresponding to the position of the component in i-th row and j-th column in the weighting matrix and a remainder of the quantization parameter divided by an integer equal to or greater than 2; ~~and a normalization value (Q2ij) respectively, the component value being located in a matrix position (ij) in the weighting matrix, and the normalization value being determined by a natural number indicating a~~

~~remainder of the quantization parameter divided by an integer N(≥2) and by the matrix position or the component value;~~

multiplying, using the computer, a quantized orthogonal transform coefficient and the level scale value;

shifting, using the computer, a product resulted from the multiplication by the number of bits according to the quantization parameter so as to obtain an inverse-quantized orthogonal transform coefficient.

24. (Cancelled)